Annotated Reference List for Lean Six Sigma Programs

This reference list does not imply that the AMEDDC&S endorses the authors' views or interpretations, but we are convinced that these books contain the heart of Lean Six Sigma and for this reason they have been chosen

This reference list has 3 sections: **Books**, **Software** and **Web Sites**. Some of the topics covered are: Activity-Based Costing, Cost of (Poor) Quality, 5S, Kaizen, Lean, Poka-Yoke, Project Management, Statistics (Elementary, DOE, EVOP, RSM), Team building, Theory of Constraints and Visual Presentation of Data.

I. Books

Recommended for those unfamiliar with Six Sigma, especially problem-solving & statistical tools:

Statistics: EZ-101 Barron's Study Keys by Martin Sternstein
A quick reference for all of the statistical tools and tests. Look up a topic for a good, short explanation.
ISBN 0-8120-1869-9

Rath & Strong's Six Sigma Pocket Guide by Rath & Strong
A neat little pocket guide (similar to the familiar GOAL/QPC pocket guides like the *Memory Jogger*).
ISBN: 0970507909

The Cartoon Guide to Statistics by Larry Gonick
The easiest way you'll ever find to learn the elementary statistical concepts – it's fun, but it's no joke. (Duke University uses this book for their STAT101 course.)
ISBN: 0062731025

Teach Yourself Statistics (2nd Edition) by Alan Graham
Another in the Teach Yourself series, good way to teach yourself. You can access 15 datasets at: www.fineshade.u-net.com/tystats
ISBN: 0658000845

Statistics: A Self-Teaching Guide *(4th Edition)* by Donald Koosis
Excellent book that guides you thru many statistical concepts and easily allows you to teach yourself statistics. Probably the best self-teach book out there (there's a reason it's the 4th Edition).
ISBN: 0471146889

Modern Elementary Statistics (10th Edition) by John E. Freund.
This is the grand-daddy of college statistics books. Very clearly written, terrific book on elementary statistics. If you are just learning statistics for the first time (or even for a rapid review) this is the book for you.
ISBN: 0130177016

Statistical Methods for Quality Improvement by Hitoshi Kume
A concise and in-depth treatment of basic quality tools such as check sheets, Pareto diagrams, cause and

effect diagrams, histograms, scatter diagrams, control charts, variances and an introduction to statistical inference. Letting Minitab do all the work is great, BUT if you want to understand the nuances of these tools, read this book.
ISBN: 4906224342

Forgotten Statistics by Douglas Downing
Good review and learning aid for persons refreshing (or learning for the first time) elementary statistics.
ISBN: 0812097130

Statistics: The Quick Notes Learning System, Antoniotti, Walter
A down-to-earth approach to learning statistics that uses an understandable small business and how it uses statistics to improve. The author has over 30 years of experience in teaching statistics – and his book really shows his expertise
ISBN: 0-9632772-5-1

The Black Belt Memory Jogger, Brassard, Mike. (Also *The Memory Jogger)*
"A pocket guide of tools for continuous improvement." The first of a series of really handy pocket sized guides. Others include: *The Team Memory Jogger*: A guide for team members; *The Memory Jogger II*: *A guide of tools for continuous improvement and effective planning*; *Memory Jogger 9000*: *A guide to implementing ISO9000 and QS-9000 requirements*, and *The Lean Enterprise Memory Jogger*.
To obtain, go online to www.goalqpc.com or call: 800-643-4316

Recommended for supporting Black Belt training:

Lean Six Sigma by Michael George
Very complete treatment of the integration of Lean and Six Sigma and the strong reasons for combining them.
ISBN: 0071385215

The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to 100 Tools for Improving Quality and Speed by Michael George, David T. Rowlands, Mark Price, and John Maxey. Best guide book for a combined Lean Six Sigma toolset. Slim on explaination, serves more as a memory jogger than a text book. Also a little big to actually fit in anything smaller than a cargo pocket or coat pocket. ISBN: 0071441190

Statistical Thinking for Managers *(4th Edition)* by D.H. Hildebrand and Lyman Ott
This book has a DEFINITE transactional focus in both the text and the problems. If your world is transactional, this is your statistics book!
ISBN: 0-534-20406-6

Basic Statistics: Tools for Continuous Improvement by Mark Kiemele
Very complete reference on broad range of statistical tools/concepts
ISBN: 1-880156-06-7 (available from www.airacad.com)

The Six Sigma Handbook by Thomas Pyzdek
Deals with problem solving, team building issues. Tom has a long history of writing clearly on performance improvement topics.
ISBN: 0071410155

Understanding Industrial Designed Experiments *(4th Edition)* by Stephen R. Schmidt & Robt. Launsby
A very practical text that "Blends the best of the best designed experiment techniques." Deals with

Taguchi, Shainin and classical DOE, tells you which is best for a given situation and why. Has a great "Rule of Thumb" appendix and includes a floppy with data and simulation packages to assist understanding of setting up and running a DOE. (Can be augmented with Air Academy Press' simulation software which is only $25 when ordered with the book – a simple but great teaching tool.)
ISBN: 1880156032

Recommended for a basic reference library:

Measuring Process Capability, Bothe, Davis R.
An outstanding book covering all aspects of process capability. (Chapter 14 has a concise explanation of the Six Sigma 1.5 sigma shift, why we should worry about the shift, and where the 1.5 sigma figure comes from.)
ISBN 0-07-006652-3

Statistics for Experimenters: An Introduction to Design, Data Analysis and Model Building,
Box, G. E. P., Wm. Hunter & J. P. Hunter
This is **the** classic book on Experimental Design. These guys were pioneers in the field. Good case studies, filled with examples.
ISBN 0-471-09315-7

The Goal: A Process of On-Going Improvement by E.M. Goldratt and Jeff Cox
Introduces the Theory of Constraints and applies it in manufacturing (first in a series of books on understanding and applying TOC, *It's Not Luck* is about TOC applied to marketing; *Critical Chain* is about TOC as applied to project management)
ISBN: 0884270610

Factory Physics *(2nd Edition)* by Wallace Hopp and Mark Spearman
This book deals with factory operation in depth.
ISBN: 0256247951

Modern Industrial Statistics by Ron Kenett and S. Zacks
This is a high-level statistics book that is very up-to-date, concise, understandable, includes a CD-ROM with many data sets that are used in text examples. Instructions for Minitab (and macros) are integrated into the text. Not for persons with limited math backgrounds.
ISBN: 0-534-35370-3

Statistical Quality Control: Strategies and Tools for Continual Improvement by Johannes Ledolter and C. W. Burrill
A very well thought-out book covering both the team problem-solving aspects (excellent explanation of Nominal Group and Delphi Techniques – best I have ever read anywhere) and the statistics (analysis of data, hypothesis testing, control charts, DOE (both classical and Taguchi methods) and Response Surface Methodology). I would read a topic in Ledolter before taking a "deep dive" in another book.
ISBN: 0471193784

The Lean Enterprise Memory Jogger by Richard L. MacInnes
ISBN: 1576810453 (Available from www.goalqpc.com)

Quality Improvement Tools & Techniques by Peter Mears
Outstanding book for concise explanations of all the tools and each explanation ends with a problem for the reader to solve "Now it's your turn" (with many of the solutions in the Appendix). Covers basic tools (Pareto to control charts) to advanced techniques (Quality Function Deployment, Hoshin Planning, Gap

Analysis, Taguchi Methods).
ISBN: 0070412197

Design and Analysis of Experiments by Douglas C. Montgomery
A very complete treatment of the field of Designed Experiments, especially good treatment of Components of Variation. This is the most translated book on DOE (for example, it is available in both Spanish and Chinese!). Montgomery also wrote *Statistics for Experimenters.*
ISBN: 0471868124

100 Management Charts by Soichiro Nagashima
An outstanding aid to persons trying to represent data in a visual manner, which assists everyone's understanding of the situation, allowing for data based decision making. Large selection of charts and visual aids for all types of applications.
ISBN: 9283319446 (Available from www.apo-tokyo.org)

The Six Sigma Way by Peter Pande, et al
Excellent book (business best seller) on Six Sigma with special importance for transactional processes. Pande is a consultant who works with GE Capital, American Express and Sears & Roebuck. For a manager wanting quick insight into Six Sigma, read the first five chapters.
ISBN: 0071358064

Design of Experiments Using the Taguchi Approach: 16 Steps to Product and Process Improvement by Ranjit K. Roy
Case studies are provided. The included CD-ROM contains Qualitek-4 software for automatic experiment design and analysis. This is a very good book on Taguchi Methods – probably the best one out there right now.
ISBN: 0471361011

Understanding Industrial Experimentation by Donald Wheeler
A very concise book that covers the field as well as the basic statistics leading to experimentation. All of Wheeler's books are well thought out, well written and understandable treatises on their topics.
ISBN: 0945320035

Understanding Variation by Donald Wheeler
A great book for starting the process of understanding process variation and how to make rational decisions about it – a short and very concise read, particularly useful for managers at all levels – so that the managers can "get it."
ISBN: 0945320353

Avoiding Man-Made Chaos, by Donald Wheeler
Only 68 pages, but a great read – especially Chapter 1 *The Germ Theory of Management*.
ISBN: 094532054X (Available from www.spcpress.com)

Other recommended books:

World Class Quality, Bhote, Keke, American Management Assn. , AMACOM.
This is one of the few books available to the general public on Dorian Shainin's approach to DOE. See below, Schmidt & Launsby, for a text that addresses classical DOE as well as the Taguchi and Shainin approaches.

Function Deployment: How to Make QFD Work for You, Cohen, Lou,
The book to buy if you are trying to learn QFD (after you have Terninko's book, see below)
ISBN: 0201633302

A Field Guide to Focused Planning: Hoshin Kanri-American Style by Joseph F. Colletti
Shows how to generate and link the high level metrics of the enterprise down to the processes in the enterprise that are generating the actual product or service. If book is difficult to find/purchase, send email to: hoshin1@aol.com
ISBN: 0965071812
(See http://www.johnstark.com/pb28.html for other publications on Hoshin Planning.)

The Practical Guide to Business Process Reengineering Using IDEFo by C.G. Feldman
If you want to truly define a process, any process no matter how complex, IDEFo is the method – and this is the book for understanding IDEFo. [Note: If your solution has an IT element, and you are trying to figure out how to define things so that IT can do their work correctly **the first time** – this is the technique and book to describe the situation accurately and completely.]
ISBN: 0-932633-37-4

Critical Chain by E.M. Goldratt
Applying the Theory of Constraints in the **single** project environment. The last dozen pages address the multi-project environment with shared resources, but not in depth (see www.pdinstitute.com for more on that topic). See also Goldratt's *It's Not Luck* for applying TOC to marketing.
ISBN: 0884271536

The Visual Factory: Building Participation Through Shared Information by Michel Greif
What's the best way to make process performance known throughout the organization? Read this book and put it into action.
ISBN: 0915299674

Activity Based Costing: Making It Work for Small and Mid-Sized Companies *(2nd Edition)* by Douglas Hicks
An outstanding book that shows how to apply ABC in an effective manner without a massive investment in resources, although titled for "small and mid-sized", larger companies would do well to read and understand. If you are interested in ABC, this is a **must** read.
ISBN: 0471249599

The Balanced Scorecard: Translating Strategy into Action by Robert Kaplan and David Norton
How do we measure ourselves for the past, present and future ? Read *The Balanced Scorecard*. The traditional financial measures alone do not tell us the whole story, we need more. This book tells us what and how to measure ourselves better.
ISBN: 0875846513

Minitab
Excellent source of information on both Minitab and statistics (electronic version of manuals are available when you load the full Minitab offering on your hard drive and hard copies can be purchased directly from Minitab). Note: Many (all?) key subjects covered in the electronic manuals are covered in Minitab's courses. You can get spiral-bound hard copies of those courses which include lots of application of examples in Minitab. Each topic area book is about $125. Also note that Minitab has a new addition to assisted learning called, *Activ-Stats,* a self-learning tool with lots of examples to work through to understand concepts and how to actually use Minitab's features.
Available at www.minitab.com

Improving Quality Through Planned Experimentation by Ronald Moen, Thomas Nolan & Lloyd Provost
Good general reference, a back-up book to the Box, Hunter & Hunter or Montgomery books on DOE.
ISBN: 0070426732

Introduction to Statistical Quality Control (4th Edition) by Douglas C. Montgomery
ISBN: 0471316482

The 5S Pocket Guide by J Peterson, and R. Smith
A good pocket guide about the 5S's and how to apply them.
ISBN: 0527763381

Quality Engineering Using Robust Design by Madhav S. Phadke
Background and application of Taguchi experimentation methods (one of the AT&T series). Good book on Taguchi and Robust Design methods.
ISBN: 0137451679

Pyzdek's Guide to SPC: Vol. 1, Fundamentals by Thomas Pyzdek
Ten chapters that are an excellent reference for fundamentals of variable and attribute control charts.
ISBN: 0930011031

Pyzdek's Guide to SPC (Vol. 1, Fundamentals, Workbook for Services) by Thomas Pyzdek
To be used in conjunction with *Pyzdek's Guide to SPC, Vol. 1, Fundamentals.* Assists persons learning the application of SPC to service processes.
ISBN: 0930011082

Pyzdek's Guide to SPC: Vol. 2, Applications and Special Topics by Thomas Pyzdek
Chapters 11 through 22 cover capability, measurement systems error, short run charting and charting for transactional processes.
ISBN: 093001104X

Design and Management of Service Processes by Rohit Ramaswamy
An excellent book on characterizing and improving service (transactional) processes (one of the AT&T series).
ISBN: 0201633833

The QFD Handbook by Jack ReVelle, J.W. Moran and C. A. Cox
Covers a wide variety of techniques and applications for assisting the translation of customer needs into the design of products and services and the related processes necessary to produce/deliver them.
ISBN 0471173819

Taguchi Techniques for Quality Engineering by Phillip J. Ross
Background and application of Taguchi techniques.
ISBN: 0070538662

Statistics Without Tears: A Primer for Non-Mathematicians by Derek Rowntree
Good explanations in a narrative style of the major elementary statistical concepts up through regression.
ISBN: 0024040908

Decision Making for Leaders by T.L. Saaty
The key book for understanding the Analytic Hierarchy Process, what it is and how to use it for making decisions in a complex world (see also in Software: *Expert Choice*). If you want to know how to make

complex (and even not-so-complex) decisions in a structured, rational way, this is a **must** read.
ISBN 0-9620317-0-4 (More info at www.expertchoice.com)

The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization by
Peter M. Senge
ISBN: 0385472560

Step-By-Step QFD: Customer Driven Product Design *(2nd Edition)* by John Terninko
Great introduction to QFD as well as TRIZ and Taguchi.
ISBN: 1574441108

Understanding SPC by Donald Wheeler
A great book on control charts.
ISBN: 0945320132

Lean Thinking: Banish Waste & Create Wealth in Your Corporation by James Womack and D. T.
Jones
Overview on lean thinking and three in-depth write-ups of how a small, medium and large firm
accomplished it. If you are interested in Lean Thinking, this is a **must** read.
ISBN: 0684810352

II. Software

Crystal Ball for Monte Carlo simulation. Crystal Ball is an easy-to-use simulation program that helps you
analyze the risks and uncertainties associated with your Microsoft Excel spreadsheet models.
Available from www.decisioneering.com

iThink simulation. Check out the "Business Solutions" page and the three options for Balanced
Scorecard, Strategy, and Process Design.
Available from www.hps-inc.com

ProModel simulation. Several different simulation packages to address different industries (service,
healthcare, manufacturing, etc.).
Available from www.promodel.com

allCLEAR process mapping. A very flexible flowcharting software tool. allCLEAR enables you to try
different what-if scenarios and simulations without actually experimenting with the real thing.
Available from www.spss.com/allclear/

Expert Choice. Advanced Decision Support Software for complex decision making in the corporate
environment utilizing the Analytic Hierarchy Process (AHP).
Available from www.expertchoice.com

Minitab software for statistical analysis
Available from www.minitab.com

III. Internet Web Sites Dealing with Statistics

Statistics on the Web
A website of all things statistical on the web. http://www.execpc.com/%7Ehelberg/statistics.html

SurfStat, Australian National University
This is a very good on-line elementary/beginning statistics text, complete with easy to read examples and a short quiz (3 questions) to test comprehension at the end of each section (it doesn't get much better than this!).
http://www.anu.edu.au/nceph/surfstat/surfstat-home/surfstat.html

The Electronic Statistics Textbook
From the statistical software package, StatSoft. Intermediate level + and very well done.
http://www.statsoftinc.com/textbook/stathome.html

SticiGui – Statistical Tools for Internet and Classroom Instruction
with a Graphical User Interface *(University of California – Berkeley)*
http://stat-www.berkeley.edu/~stark/SticiGui/